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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,391	10/22/2001	Yeong-Taeg Kim	SAM2.0003	5346

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EXAMINER

YENKE, BRIAN P

ART UNIT PAPER NUMBER

2614

DATE MAILED: 03/24/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,391

Applicant(s)

KIM ET AL.

Examiner

BRIAN P. YENKE

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-14 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 5 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2,3, & 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 9-13 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Jiang et al., US 2002/0027610.

In considering claims 1 and 12,

a) the claimed inputting a video signal... is met by input 101, which are an interlaced video signal (Fig 1).

b) the claimed computing a frame difference signal... is met by pixel difference unit 107, which takes the luminance value differences of pixels in prescribed fields (Fig 3, page 2, Para 23).

c) the claimed forming a point-wise motion detection signal... is met by motion detection 109 (Fig 1), which computes the motion metrics.

d) the claimed computing a region-wise motion detection signal... is met by motion detection 109 (Fig 1), which computes the motion metrics.

e) the claimed forming from the region-wise motion detection signal a motion decision value... is met by spatial median filter 110 and LUT 11, where the motion metrics computed by motion detector 109 are filtered via spatial median filter 110 and then LUT 111 obtains the weight (blending factor), for frame or field interpolation.

In considering claims 2 and 13,

The claimed low-pass filtering the difference signal prior to the step of forming the point-wise motion detection signal is met by LPF 108 (Fig 1).

In considering claims 9 and 19,

a) the claimed spatially interpolating a value of the video signal... is met by frame interpolator 105 (Fig 1)

b) the claimed temporally interpolating the value of the video signal... is met by field interpolator 106 (Fig 1).

c) the claimed forming a motion decision value... (refer to rejection of claims 1 and 13 above).

d) the claimed mixing an output signal... is met by alpha blender 112 (Fig 1) where the blending of the video signal is based upon the motion value determines the blending of the field and/or frame interpolation (page 3, Para 40-44).

In considering claims 10 and 11,

Jiang discloses that based upon the motion metric value, which varies between 0 and 1, (page 3, Para 42) determines the blending factor of the interpolation methods. As shown in Fig 5, when there is little or no motion (motion metric value = 0) the field

Art Unit: 2614

(temporal) interpolation is used, where there is high or maximum motion (motion metric value = 1) the frame (spatial) interpolation is used.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 6, 8, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Jiang et al., US 2002/0027610.

In considering claims 3 and 14,

Regarding the matrix of coefficients for the LPF. Jiang discloses a LPF 108, which is used to smooth the pixel luminance value differences. However, Jiang does not explicitly disclose the LPF being defined by a matrix. Jiang does disclose computing various (Fig 3) pixel luminance value differences in order to determine the motion for each missing pixel and then interpolating the missing lines to create a progressive field (from the interlaced signal).

It is noted by the examiner that a filter, which is defined by a matrix, is conventional in the art. Since a filter based upon the application, can be weighted according to the input (based on position, size, etc) in order to provide a predetermined output.

Thus the examiner takes "OFFICIAL NOTICE" regarding a LPF defined by a matrix.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jiang which discloses a LPF in smoothing out the differences between various differences on pixels in various locations, to utilize a LPF defined by a matrix to filter the respective differences by a predetermined factor, to provide a smoothed signal based upon it's relevance to the missing pixel.

In considering claims 6 and 16,

Regarding the use of a LPF to filter the region-wise motion detection signal prior to outputting.

Jiang does disclose the use of a LPF 108 (Fig 1), however Jiang does not explicitly disclose the use of a LPF prior to outputting.

However, the use of a filter (LPF), which is used to filter a signal, whether at the input, output or in-between is a matter of design choice, based upon the size of the system, the type/quality of the signal inputted/output and thus bares no patentable weight.

In considering claim 8,

As stated above with respect to claims 2 and 14, Jiang does not specifically disclose a matrix for the LPF, thus Jiang does not disclose the coefficients as claimed in the present claim.

However, the examiner maintains that coefficients of a matrix, which are used by a filter, are arbitrary based upon the designer and the system/signals being utilized. Therefore, the selection of coefficients bares no patentable weight, unless the newly discovered coefficients derive/provide some unexpected result(s) which was previously unobtainable.

Allowable Subject Matter

3. Claims 5 and 15 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Double Patenting

4. Claims of 1-4, 6-14 and 16-19 of this application conflict with claims 1-4, 7-15 and 19-22 respectively of Application No. 10/001676. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefore..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re*

Art Unit: 2614

Ockert, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-4, 6-14 and 16-19 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-4, 7-15 and 19-22, respectively of Application No. 10/001676. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or

Art Unit: 2614

relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)305-HELP.

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An automated message system is available 7 days a week, 24 hours a day providing informational responses to frequently asked questions and the ability to order certain documents. Customer service representatives are available to answer questions, send materials or connect customers with other offices of the USPTO from 8:30 a.m. - 8:00p.m. EST/EDT, Monday-Friday excluding federal holidays.

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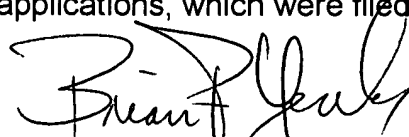
Art Unit: 2614

General information brochures can also be obtained in person from the Patent Search Room located in Crystal Plaza 3, Room 1A03, 2021 South Clark Place, Arlington, VA 22202.

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B.P.Y
17 March 2004



BRIAN P. YENKE
Primary Examiner
Art Unit 2614